

# Claims

[c1] The invention I claim is:

1. A device for preheating oil in a combustion system, comprising of:

a body made of thermally conductive material having an oil passageway means of conveying an oil and a liquid passageway means of conveying a heated liquid, and

an oil pump means of communicating said oil which is operatively connected to said oil and said oil passageway, and

a liquid pump means of communicating said heated liquid which is operatively connected to said heated liquid and said liquid passageway,

whereby said heated liquid is communicated via said liquid pump and conveyed through said liquid passageway and said oil is communicated via said oil pump and conveyed through said oil passageway,

whereby heat energy is conductively transferred from said heated liquid through said body to said oil thus heating and lowering the viscosity of said oil providing an enlarged means of said oil to be atomized and incinerated with said combustion system.

- [c2] 2. The device of claim 1 wherein said body further includes an air passageway means of conveying compressed air through said body and provides an enlarged means of utilizing an air atomizing nozzle for spraying and atomizing said oil.
- [c3] 3. The device of claim 1 wherein said body is made of a plurality of conduits conductively placed adjacent to one another.
- [c4] 4. The device of claim 1 wherein said body is constructed of material having a predetermined cross sectional shape and length causing it to be of sufficient capacity as need be to properly operate in various applications.
- [c5] 5. The device of claim 1 wherein said body further includes a nozzle operatively connected to said oil passageway means of spraying and atomizing said oil.
- [c6] 6. The device of claim 1 further including an igniter means of providing ignition of atomized said oil.
- [c7] 7. The device of claim 1 further including a burner assembly means of housing and operating said device in said combustion system.
- [c8] 8. The device of claim 1 wherein said body further includes one or more brackets means of fastening said

body to said burner.

- [c9] 9. An oil preheat device for a combustion system, comprising of;  
a body made of thermally conductive material having an oil passageway means of conveying an oil and a liquid passageway means of conveying a heated liquid, whereby heat energy is conductively transferred from said heated liquid through said body to said oil means of lowering the oil viscosity and provides an enlarged means for said oil to be atomized and incinerated with said combustion system.
- [c10] 10. The device of claim 9 wherein said body further includes an air passageway means of conveying compressed air through said body and provides an enlarged means of utilizing an air atomizing nozzle for spraying and atomizing said oil.
- [c11] 11. The oil preheat device of claim 9 wherein said body is made of a plurality of conduits conductively placed adjacent to one another.
- [c12] 12. The oil preheat device of claim 9 wherein said body is constructed of material having a predetermined cross sectional shape and length causing it to be of sufficient capacity as need be to properly operate in various appli-

cations.

- [c13] 13. The oil preheat device of claim 9 wherein said body further includes a nozzle operatively connected to said oil passageway means of spraying and atomizing said oil.
- [c14] 14. The oil preheat device of claim 9 further including an igniter means of providing ignition of atomized said oil.
- [c15] 15. The oil preheat device of claim 9 further including an oil pump means of communicating said oil from its source to said oil passageway of said body.
- [c16] 16. The oil preheat device of claim 9 further including a liquid pump means of communicating said liquid from its source to said liquid passageway of said body.
- [c17] 17. The oil preheat device of claim 9 further including a burner assembly means of housing and operating said device in said combustion system.
- [c18] 18. The oil preheat device of claim 9 further including one or more brackets means of fastening said device to said burner.
- [c19] 19. The oil preheat device of claim 9 further including a liquid heater means of heating said liquid.

[c20] 20. A method of preheating oil in a combustion system, comprising the steps of;

- providing a source of oil, and
- providing a heated liquid, and
- communicating said heated liquid through a liquid passageway within a body made of thermally conductive material, and
- communicating said oil through an oil passageway within said body made of thermally conductive material,

whereby heat energy is conductively transferred from said heated liquid through said body to said oil causing said oil to be heated and lowered in viscosity providing an enlarged means for said oil to be atomized and incinerated with said combustion system.